

REMARKS

Claims 1-6, 7-23, and 25-45 are now pending in the application. Claims 1, 3, 5, 6, 9, 11, 17-19, and 30 have been amended. Claim 24 has been cancelled without prejudice. Claims 34-45 are new.

In the Office Action claims 1-9, 11, 13, 16, 19-25, 31 and 33 were rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 5,748,775 to Tsuchikawa (hereinafter "Tsuchikawa ") in view of U.S. Pat. Application No. published as US 20030106072 by Soundararajan (hereinafter "Soundararajan"). Claim 24 has been cancelled and any rejections regarding these claims have been rendered moot.

Tsuchikawa relates to a video stream, to video recording, and to image processing aimed at extracting a moving object from a video frame. As such, Tsuchikawa is concerned with moving object extraction based on background subtraction and extracting the moving object (such as a human or an automobile) from the background.

The presently claimed invention relates to an interaction captured, for example, in a call center between an agent and a customer or a third party. The disclosure is also directed to identifying meaningful parts of the interaction for the purpose of analyzing voice or screen events within the interaction in an efficient manner. In the instant application, the captured media comprises the vocal part of the interaction and the screen events (par. 15).

Independent claim 1 is directed to an apparatus for event driven content analysis of a captured interaction. Claim 1 now provides for a media type selector component to select a type of interaction media inputted for analysis from an at least one interaction recording or storage device. Claim 1 also provides for a pivot spot definer component to mark a time position in the interaction media to indicate an event or data item. Claim 1 further provides for

a region of interest definer component to determine the time limits of an at least one segment of the interaction, specifically, the segment containing the time position of the pivot spot. The region of interest definer component has an optimization component for optimizing the region of interest.

Independent claim 19 is directed to a method for event-driven content analysis. Claim 19 provides for the steps of determining an at least one pivot spot, being a time position, on an interaction media between an organization and a customer associated with an at least one event associated with the interaction media to be analyzed. Claim 19 also provides for determining the time limits of the at least one segment of the interaction media to be analyzed. The limits define an initial region of interest within the interaction. Claim 19 further provides for optimizing the initial region of interest by performing an at least one analysis instruction step within the initial region of interest and readjusting the initial region of interest in accordance with a result of the at least one analysis instruction step, to obtain a region of interest. At least one analysis instruction step is executed on the region of interest.

The Office Actions indicates that a pivot spot definer is disclosed at Col. 5, lines 18 through 26. That portion of the specification discloses that there is a storage means 100 for storing the image feature parameter values for an input image containing a background region and a moving object region. Moving object region is divided into a plurality of sub-regions $a(x)$ such as pixels located at coordinate positions (x, y) within each frame. There is no recitation of a pivot spot definer in the cited text referred to in the Office Action to disclose or suggest the pivot spot definer of the claimed invention. The pivot spot definer component requires the identification of a **time position** within the interaction. No such recitation is provided in Tsuchikawa et al. in the cited text.

The Office Action further indicates that a region of interest definer component is disclosed at Col. 5, lines 27 through 51 of Tsuchikawa et al. The referenced citation addresses the components for updating the background of image such as a background image region

reconstruction means 300 and a plurality of background images sub-region update means 200. Means 200 includes processing means to statistically processing the temporal change of the intensity of each sub-region during a time period. In Tsuchikawa, the terms sub-region and target region refer to areas of a video frame, the areas comprised of pixels (col. 5 ll. 18-26), while in the instant application, the region of interest refers to a part of the interaction, starting and ending at particular time points (see for example Fig. 2). The region of interest is the part of the interaction in which analyses are to be performed, in order to spare resources and avoid analyzing the whole interaction. The region of interest is defined as a time period preceding and/or following the pivot point, which is also a time position within the interaction (see for example par. 31). The region of interest definer component of the claimed invention determines the time limits of at least one segment of the interaction, where the segment contains the time position of the pivot spot, and optimizes the region. The referenced citation of Tsuchikawa et al. does not recite any such limitation.

The Office Action combines the Tsuchikawa patent in combination with the Soundararajan patent to address the limitation of the media type selector.

Soundararajan is directed to a system for storing multimedia information received from a real-time broadcast multimedia stream for retrieval and/or processing at a predetermined time. The system includes a PC and a multimedia interface. Further, Soundararajan relates to the storage of multimedia from TV and cable broadcasting (par. 15), and not to interaction media, comprising phone interactions and screen events as in the instant application.

The Office Action states that “ Soundararajan teaches a multimedia source input for receiving multimedia content from a multimedia stream 102.” (Page 3) Multimedia stream can refer to signals originating from a variety of sources. The Office action further states in the same paragraph that “it would have been obvious to one of ordinary skill in the art at the time of the invention [sic] a media type selector to select a type of interaction media inputted for analysis. .

.wherein all multimedia can interface through a single distributed storage media”. Applicants respectfully disagree with this conclusion.

The cited portion of the text does not reference any media type selector. The reference text simply addresses different types of signals and sources. The cited portion of the text is largely concerned with defining the term “multimedia stream” and merging streams. There is not a component in the cited text that discloses a media type selector component for selecting an interaction media from an interaction recording, as required in independent claim 1.

Furtherther, the Office Action references col. 5 lines 27-51 of Tsuchikawa, as evidently reciting optimizing the initial region of interest as recited in independent claim 19. Tsuchikawa discloses re-adjusting the region of interest. As discussed above, the region of interest in Tsuchikawa relates to a part of a frame comprised of pixels, while in the instant application the region of interest relates to a part of the interaction, limited by time points. Further, in col. 5 lines 27-31, Tsuchikawa discusses the background of the images, which is not the region of interest. The referenced portion of Tsuchikawa does not disclose the claim limitation.

Moreover, the combination of Tsuchikawa and Soundararajan is not one that one of ordinary skill in the art would make. Tsuchikawa relates to extracting a moving object from a digital image, while Soundararajan relates to a personal recorder of TV broadcasts. It is not obvious to combine a personal device storing films or other broadcasts, with image processing techniques, which are usually utilized in commercial, scientific, business, or other environments, rather than on a personal-use storage.

Soundararajan teaches neither the media type selector, for which it was cited, nor the pivot spot definer or the region of interest definer component, that were not taught by Tsuchikawa, as claimed.

Applicants note that, the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.

The legal concept of *prima facie* obviousness is a procedural tool of examination which applies broadly to all arts. It allocates who has the burden of going forward with production of evidence in each step of the examination process. See *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Saunders*, 444 F.2d 599, 170 USPQ 213 (CCPA 1971); *In re Tiffin*, 443 F.2d 394, 170 USPQ 88 (CCPA 1971), *amended*, 448 F.2d 791, 171 USPQ 294 (CCPA 1971); *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1968).

Reconsideration and withdrawal of the § 103(a) rejection are respectfully requested.

Dependent claims 2 through 9, 11, 13, 16, 20, 21 through 23, 25, 31 and 33 depend from claims 1 and 19, respectively. These claims are also allowable for the reasons set forth above with respect to independent claims 1 and 19.

Particularly, dependent claim 4 provides for an audio analyzer component for performing an analysis on the media selected by the media selector component in a location adjacent to the pivot spot identified by the pivot spot definer component.

Claim 5 provides for an analyzer component for performing an analysis on the media selected by the media selector component in a location adjacent the pivot spot identified by the pivot spot definer component .

The Office Action indicates that these elements are taught by Tsuchikawa. The cited portions of the reference did not address these limitations as indicated above. The Office Action cites Soundararajan to address the media selector component limitation. As indicated above,

Soundararajan teaches recording multi media streams, but not analyzing them. Soundararajan cannot therefore teach components for analyzing audio.

As discussed above, the cited reference of Soundararajan did not disclose or suggest any media selector component.

Claim 9 provides for the element of an audio analyzer component to analyze the audio elements of the interaction. Tsuchikawa does not disclose an audio analyzer component. Tsuchikawa discusses frames and image processing, rather than audio or audio analysis. Soundararajan does not remedy this deficiency.

Claim 11 provides that a screen event analyzer component identify an at least one screen event associated with the interaction data and capture at least one screen based on the screen event. The Office Action references Col. 5 lines 5-17 as teaching this limitation. The referenced text of Tsuchikawa instead discusses terms such as pixels and does not disclose screen events which include structured data relating to how a user (agent in the current case) is operating an application. Applicants have also enhanced Claim 11 to reflect that capturing the screen is driven by the screen events. Screen events refer to "events identified by a system in response to one or more of the following: actions performed by the agent in association with the use of a system as viewed by the agent on the screen display including but not limited to keyboard press, mouse click, etc.; data entered into all or part (Region of Interest) of the display or non-displayed window (window might not be in focus); operating system screen related events. Such as the Esc button pressed, etc; pre-defined multi- sequence events. Such as entering the amount in window application A can generate an update in certain reduction field in Application B. Only these dependant occurrences would yield either input or trigger for the analysis process" (end of par. 0011 of US20040249650, which is a national phase of PCT/IL02/00593, incorporated by reference into the instant application). Thus, screen events are not to be confused with a "bitmap" displayed on the agent's screen and are therefore not analyzed using image processing techniques,

but rather represent structured data associated with the computer application executed by the agent.

In the Office Action, claims 10, 14, 15, 17, 18, 26, 30 and 32 are rejected under 35 U.S.C. 102(a) as being unpatentable over Tsuchikawa, Soundararajan, in further view of U.S. Patent No. 6,917,610 to Kung (hereinafter "Kung").

Kung is directed to an activity log for billing purposes in a broadband communication system. The logs used by Kung are usually known as Call Detail Records (CDR) and are created after a communication is over and can be billed. There are no intra-interaction events, such as "hold", "transfer" or conference events, which belong to the field of Computer-Telephony Integration (CTI) (par. 18, Fig. 2). In order to identify pivot points and regions of interest within the interaction, Intra-interaction events such as CTI events are required, as opposed to post-interaction data.

Claim 10 provides for a computer telephony interface events analyzer component to identify and capture at least one computer telephony integration events occurring during the interaction. Kung does not teach or suggest using a computer telephony interface events analyzer for identifying and capturing CTI events occurring during the interaction, as disclosed by claim 10.

Claim 17 provides that the interaction meta-data relate to an at least one computer telephony integration event or CRM event occurring during the interaction. As discussed, these events are intra-interaction events and are therefore not disclosed by Kung.

Claim 18 provides that the interaction meta-data be associated with the at least one screen event. Kung does not refer to intra-interaction events. Moreover, screen events, which are application-related events occurring on the computer's screen are not disclosed by Tsuchikawa, Soundararajan, or Kung.

New claims 34-46 have been added to further claim the full scope of the invention. Claims 34 and 35 depending from claims 1 and 19, respectively, and relate to ways for determining the pivot spot, including Computer Telephony Integration events, screen events, emotional levels or spotted words.

Claims 36 and 37 depending from claims 1 and 19, respectively, and provide for ways for optimizing the region of interest, including predetermined length, Computer Telephony Integration events, screen events, emotional levels or spotted words.

Claim 38 depending from claim 1 and claim 39 depending from claim 19 relate to the interaction being between an agent and a customer (par. 18).

Claim 40 depends from independent claim 19 and provides for optimizing the initial region of interest by choosing less resource extensive analysis over more resource extensive analysis, in order to save computing or time resources (par. 16).

Claims 41-43 disclose various scenarios in which the method is used, the scenarios detailed in pars. 37-40.

It is believed that new claims 34-43 are in condition for allowance for at least the reason of their dependence from base claims that are allowable as described above.

Claim 44 is an independent apparatus claim and claim 45 is an independent method claim.

Independent claim 44 provides for the event-driven content analysis of a captured interaction, within a computerized system having a processing unit and a storage unit. Claim 44 provides for a media type selector component to select a type of an interaction media inputted for analysis from an at least one interaction recording or storage device and a pivot

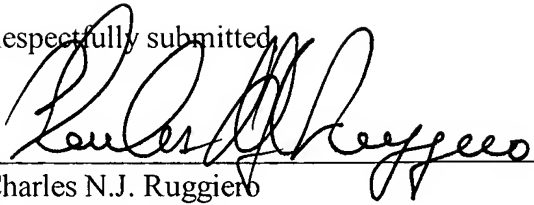
spot definer component to mark an at least one time position in the interaction media to indicate the occurrence of an at least one pre-defined event or data item. Claim 44 also provides for an analysis type selector component to identify and to select an at least one analyzer component type for determining a region of interest or for analyzing the region of interest and an analyzer component for performing an analysis on the media selected by the media selector component in a location adjacent to the pivot spot, or in the region of interest. Claim 44 further provides for a content analysis input selector component to determine an at least one input or parameter for the at least one analyzer component. Claim 44 further provides for a region of interest definer component to determine the time limits of an at least one segment of the interaction, the segment containing the time position of the pivot spot, the region of interest definer component comprising comprises an optimization component for optimizing the region of interest.

New independent claim 45 is directed to a method for event-driven content analysis, within a computerized system having a processing unit and a storage unit. Claim 45 provides for receiving interaction data and associated meta-data from an at least one interaction; and determining an at least one pivot spot, being a time position, on an interaction media associated with an at least one event associated with the interaction. Claim 45 also provides for selecting a first method for the analysis of the at least one interaction media based on the at least one event associated with the interaction and determining the time limits of the at least one segment of the interaction media to be analyzed. The limits define an initial region of interest within the interaction. Claim 45 provides for optimizing the initial region of interest by performing an at least one analysis instruction step within the initial region of interest and readjusting the initial region of interest in accordance with a result of the at least one analysis instruction step, to obtain a region of interest; selecting a second method for analyzing the region of interest; and analyzing the region of interest using the second method.

The cited prior art either alone or in combination does not teach or suggestion claimed invention.

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